

Abstract of the Disclosure

[0027] Safe and effective live vaccines against *Flavobacterium columnare* of fish were created through the induction of rifampicin resistance in a native *Flavobacterium columnare* isolate; these including rifampicin-resistant mutants NRRL B-30303 and B-30304. Single immersion exposure of fish stimulated acquired immunity against virulent *F. columnare* infection.

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